

[Revolver with Activating Key and Lock]

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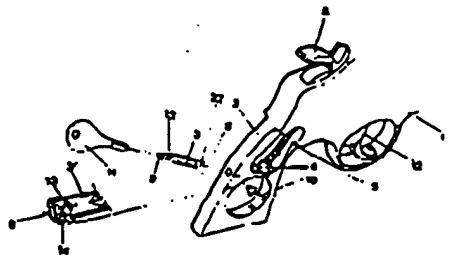
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REVOLVER WITH ACTIVATING KEY AND LOCK

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Abstract

Locking device applied to a revolver, consisting of a cylindrical body (3) housed in the handle (2) of the revolver (1), said cylindrical body being equipped with an opening (6) whose diameter coincides with the lower end of the shaft (7) of the master spring (5); said cylindrical body (3) further having a visible end (9) on the handle (2), which is provided with a slot or projection that allows only the proper key (11) to fit it. Said locking device prevents the weapon from being fired by obstructing any movement to cock the hammer by preventing the master spring shaft that pushes against the hammer from moving.



Formal descriptive statement of the Invention Patent for a "Locking Device Applied to Revolvers."

The invention concerns a key-operated locking device built into a conventional type of revolver equipped with a helicoidal master spring. The locking device of the invention acts on the revolver by obstructing movement of the hammer in order to prevent accidents from occurring when it is being handled by the wrong persons, such as children or persons others than the owner; the revolver can be unlocked only by using the proper key.

Existing locking devices for lightweight guns such as semi-automatic pistols are based on locking the action of the firing pin, which prevents the gun from firing even if the hammer has been cocked, as in the case of the Colt 45 pistol, model 1911 A1. This type of lock is possible because such pistols use a percussive principle, in which the hammer hits directly against the firing pin which ignites the shot (the same percussive principle is applied in some revolver models, such as the case of the Taurus revolver, model B6).

The user is able to lock/unlock this type of pistol merely by exerting pressure on a button or shaft positioned on the side of the gun, so that anyone, and not just the owner, is able to unlock the weapon, whether accidentally or not, and thereby shoot it.

The use of this type of lock in revolvers becomes impractical given the lack of physical space on them. In addition, in most revolvers, as in the case of the Rossi revolver, model 94, the firing pin is integral with the hammer, and the shot occurs when the hammer hits directly against the bullet. Thus, the effective locking of this type of revolver, which by extension is applicable to other types, consists of obstructing the movement of cocking the hammer by making a locking device, operated by the proper key, located on the handle of the revolver where there is enough room to do so.

Consequently, the purpose of the present invention is a locking device applied to revolvers, activated by a key or similar object, which obstructs the movement of cocking the hammer when it is locked in order to prevent it from being fired by inappropriate persons or persons other than the rightful owner.

The purpose of the invention also includes a locking device equipped with means to alert the user of its condition, in other words, whether it is locked or unlocked.

The locking device according to the invention consists of a cylindrical body housed in the handle of the revolver perpendicular to the shaft of the master spring and below the seating of said master spring, said cylindrical body being equipped with a diameter opening that coincides with the lower end of the shaft of the master spring, and a visible end provided with a slot or projection that allows only the correct key to fit it, and a projecting mechanism acting on the cylindrical body.

When the trigger is pulled, it forces the hammer first to make a retracted motion, which compresses the master spring, causing the shaft of the spring to move downward. The unlocked state is characterized by the fact that the opening provided in the cylindrical body is aligned with

the shaft of the master spring, thereby permitting the free vertical motion of said shaft through said opening.

In order to characterize the "locked" state, the cylindrical body is merely rotated approximately 90° by using the appropriate key, causing the opening in the cylindrical body to no longer be aligned with the shaft of the master spring, the side wall of said cylindrical body thereby obstructing the vertical motion of said shaft, which prevents the hammer from retracting and, as a result, the weapon from firing.

It should be pointed out that in order to lock or unlock the revolver, the weapon must not be cocked, which is to say that the hammer must be completely lowered.

The above-mentioned means to alert the user of the state of the device consists basically of a mechanism that acts on the cylindrical body, causing it to project so that its visible end sticks out from the back of the handle when the revolver is locked.

Such a mechanism is preferably made by simply providing the cylindrical body with bearings, or by the combined action of a pin-bearing and a spring.

The first preferred embodiment of the projecting mechanism of the cylindrical body (simply fitting the cylindrical body with bearings) consists of making a helicoidal channel on the body, said channel being traversed by the end of a screw or pin fixed to the structure of the handle. As the cylindrical body is rotated in order to lock the weapon, the channel is traversed by the fixed screw, causing the cylindrical body to move in its housing, and causing its visible end to project from the back of the handle; the cylindrical body returns to its original position when it is rotated in the direction opposite the original one.

The second preferred embodiment of the projecting mechanism of the cylindrical body (combined action of a pin-bearing and a spring), consists of making an annular channel on the cylindrical body and, adjacent to it, a recess in the form a cylindrical cup, said annular channel being traversed by a pin-bearing; in this embodiment the cylindrical body must have a rim in the vicinity of its visible end, resting against which is one end of a helicoidal spring that surrounds the cylindrical body, whose other end rests on a stop provided in the housing of the cylindrical body.

When the pin-bearing is in the channel, the spring remains compressed and the cylindrical body is prevented from any movement except rotation. When the cylindrical body is rotated using the proper key in order to unlock the weapon, the pin-bearing traverses the channel until it reaches the recess adjacent to it, at which point the spring pushes the cylindrical body, causing it to project from the back of the weapon's handle. In order to make the cylindrical body return to its original (unlocked) position, the user must first press the cylindrical body so as to cause the pin-bearing to enter the annular channel, whereupon the cylindrical body must be rotated so as to cause the pin-bearing to traverse and remain in the annular channel.

In order to determine exactly how much rotation of the cylindrical body is required for it to be in a “locked” or “unlocked” position, a ratchet mechanism may be provided, consisting of a spring and ball, which is seated in one or more cavities provided in the cylindrical body.

The invention will be better understood in light of the attached drawings that illustrate by way of non-limiting example the preferred embodiment of the invention, wherein:

- Figure 1 is a partial exploded illustration in perspective of a revolver incorporating the locking device that is the object of the invention according to a preferred embodiment;
- Figure 2 is a partial front view of the handle of the revolver from Figure 1, illustrating the locking device in the “unlocked” position;
- Figure 3 is a partial front view of the handle of the revolver from Figure 1, illustrating the locking device in the “locked” position;
- Figure 4 is a partial exploded view in perspective of a revolver incorporating the locking device that is the object of the invention according to another preferred embodiment;
- Figure 5 is a partial front view of the handle of the revolver from Figure 4, illustrating the locking device in the “unlocked” position;
- Figure 6 is a partial front view of the handle of the revolver from Figure 4, illustrating the locking device in the “locked” position.

With reference to the attached drawings, it is shown that conventional type of revolver (1) has a locking device built into in handle (2) that consists essentially of cylindrical body (3) housed perpendicularly and below seating (4) of master spring (5), in which is provided opening (6) that coincides with the lower end of shaft (7) of master spring (5). Said cylindrical body (3) also includes visible end (9) located at the back of handle (2) and equipped with a slot or projection that allow only the right key (11) to fit it.

Pulling trigger (12) causes a displacement of hammer (8), which compresses master spring (5), causing shaft (7) of said master spring (5) to move downward. The “unlocked” condition is characterized by the fact that opening (6) on cylindrical body (3) is aligned with shaft (7) of master spring (5), thereby permitting the free vertical movement of said shaft (7) of master spring (5) through opening (6).

The locked condition is characterized by the fact that after rotating cylindrical body (3) using key (11), opening (6) on cylindrical body (3) ceases to be aligned with shaft (7) of master spring (5), thereby obstructing the vertical movement of shaft (7) of master spring (5) by the side wall of cylindrical body (3), which, in turn, prevents hammer (8) from moving and, as a result, the revolver (1) from firing.

The locking device according to the invention also includes a projecting mechanism of cylindrical body (3), which functions by causing visible end (9) of cylindrical body (3) to project

from the back of handle (2) whenever revolver (1) is in the "locked" position. Said projecting mechanism may be made according to two preferred embodiments.

A first preferred embodiment of the projecting mechanism (Figures 1 to 3) provides for helicoidal channel (13) to be formed in cylindrical body (3), said channel being traversed by the end of screw (14) fixed to the structure of handle (2). When cylindrical body (3) is rotated to lock the weapon, helicoidal channel (13) is traversed by fixed screw (14), which causes the cylindrical body to move in its housing, and its visible end (9) to project from handle (2).

A second preferred embodiment of the projecting mechanism (Figures 4 to 6) provides for the use of cylindrical body (3') equipped with rim (15) near its visible end (9), in which annular channel (16) is made, adjacent to which is recess (17) in the form of a cylindrical cup, said annular channel (16) being traversed by pin-bearing (18). In this embodiment of the projecting mechanism, helicoidal spring (19) is also provided, positioned around cylindrical body (3') between rim (15) and the stop in the housing of cylindrical body (3').

As long as pin-bearing (15) remains in annular channel (16), spring (19) remains compressed and all movement except rotation of cylindrical body (3') is prevented. When cylindrical body (3') is rotated with key (11) in order to lock the weapon, pin-bearing (18) traverses annular channel (16) until it reaches recess (17) adjacent to it, at which point the spring pushes the cylindrical body, thereby causing visible end (9) of cylindrical body (3') to project from the back of handle (2).

Alternatively, a known ratchet mechanism is provided, consisting of spring (20) and ball (21), which is seated in one or more cavities (22) provided in cylindrical body (3) in order to determine the exact rotation needed to lock or unlock the weapon.

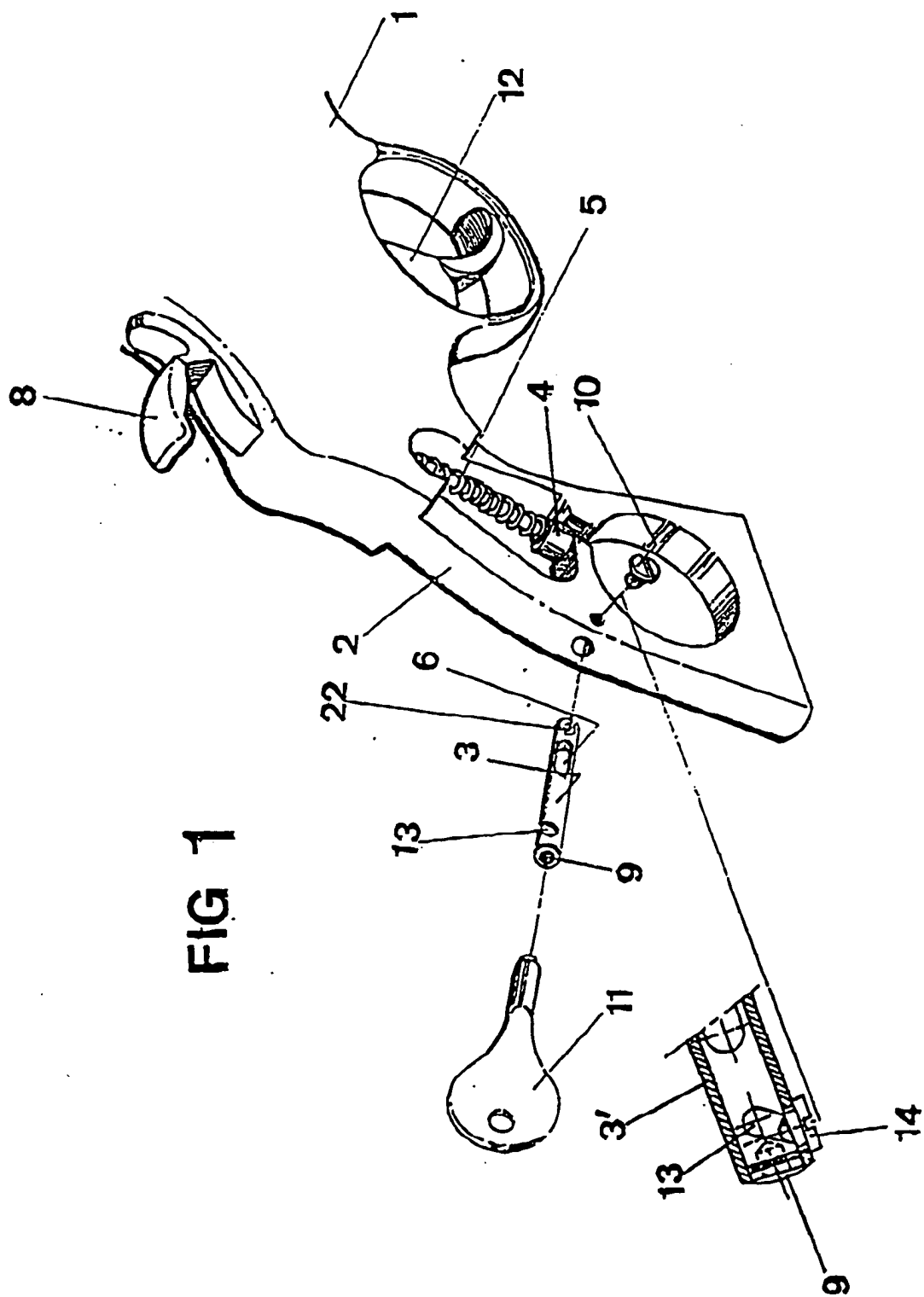


FIG 1

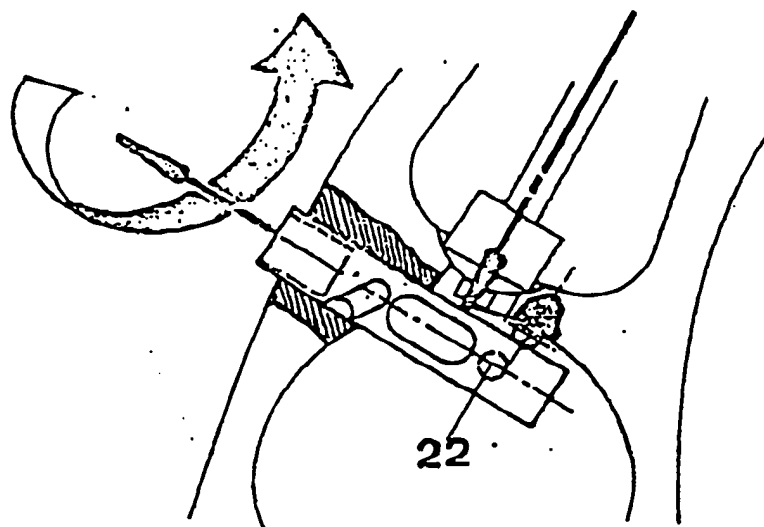
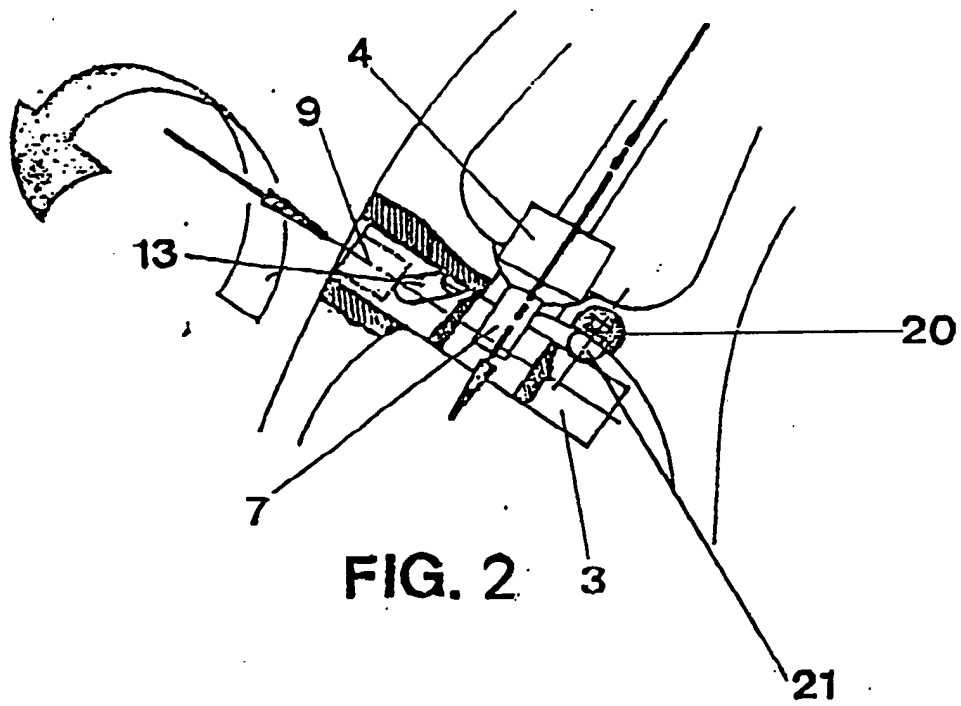


FIG. 3



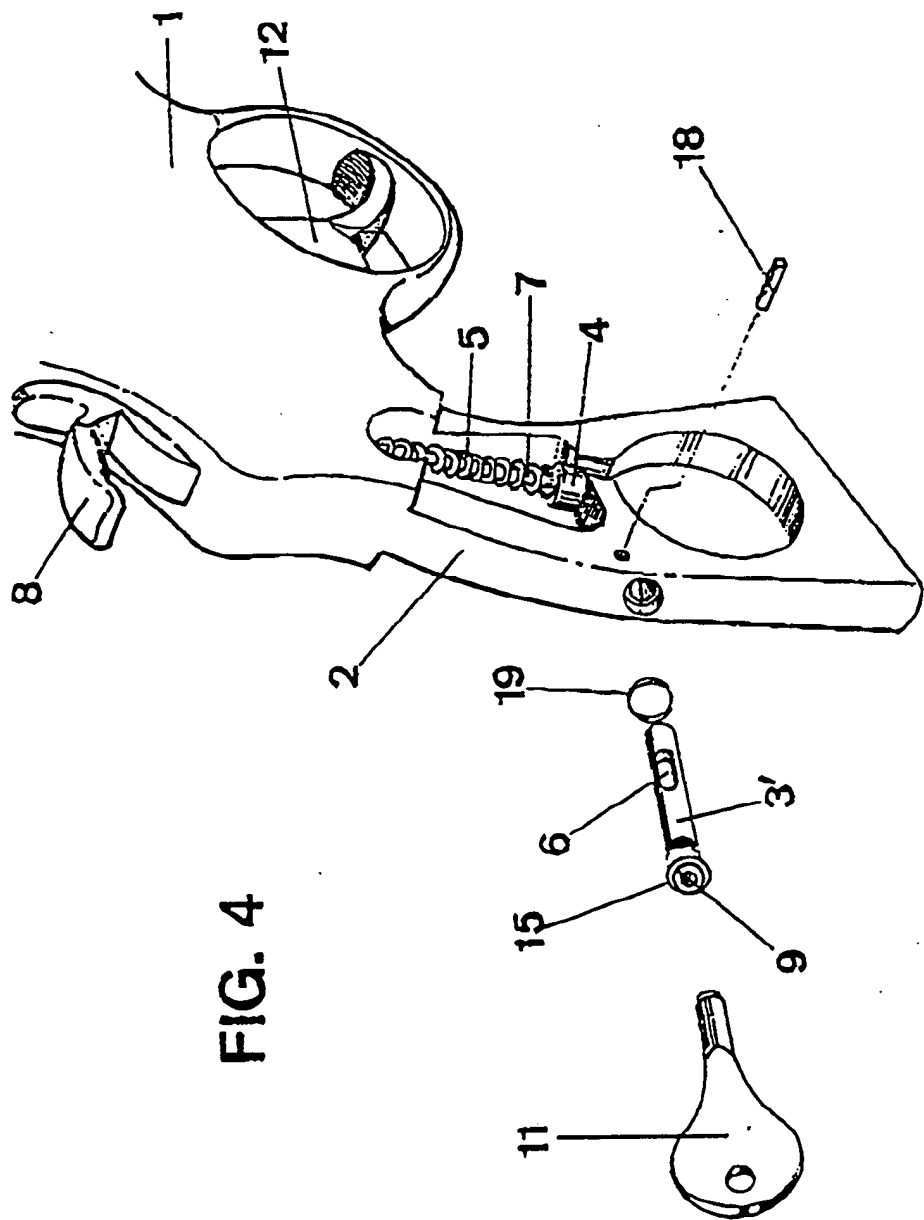
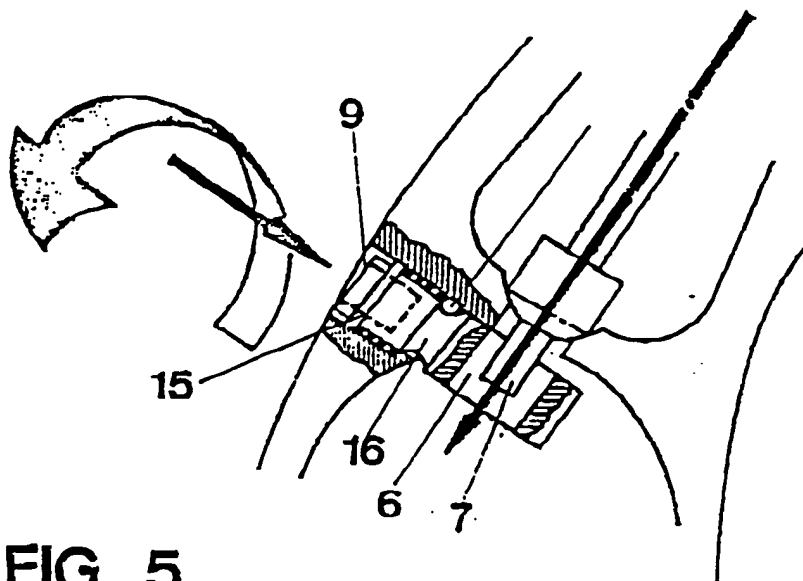
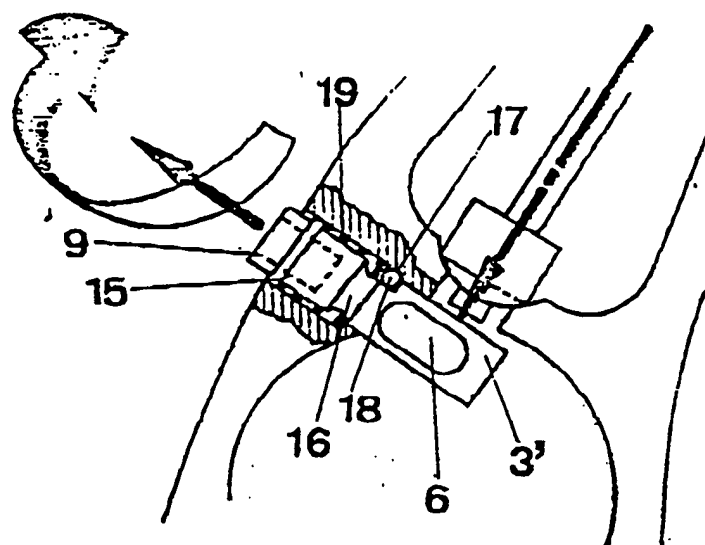


FIG. 4



**FIG. 5**



**FIG. 6**

[illegible]

Date Filed: August 17, 1989

Formal descriptive statement of the Guaranteed Right of Priority of the Invention for  
"Revolver with Activating Key and Lock."

The invention refers to a revolver that incorporates a device to lock the action of the hammer, thereby preventing accidents from occurring when it is handled by inappropriate persons, such as children or others who have never handled firearms.

Therefore, the object of the invention, according to the sole figure [below] illustrating the revolver of the invention, in a perspective view and in partial cross section, consists of conventional type of revolver (1) equipped with a locking mechanism placed in handle (2) of said revolver, said mechanism consisting of cylindrical body (3) housed perpendicularly and below seat (4) of master spring (5), in which is provided opening (6) that coincides with the lower end of shaft (7) of master spring (5) that pushes hammer (8), said cylindrical body (3) having visible end (9) located on the back of handle (2), said end being provided with a slot or projection such that it permits its key (11) to fit it.

When trigger (12) is pulled, hammer (8) is displaced, which compresses master spring (5) causing shaft (7) of said spring to move downward. As shown in the sole figure, the weapon's "unlocked" condition is obtained by rotating cylindrical body (3) using key (11) so that opening (6) is in alignment with shaft (7) of master spring (5), thereby permitting the free movement of said shaft (7).

On the other hand, as the sole figure illustrates, the weapon enters its locked position when, due to the rotation of cylindrical body (3) with key (11), opening (6) ceases to be aligned with shaft (7) of master spring (5), so that when the trigger is pulled, the movement of shaft (7) is obstructed by cylindrical body (3), thereby preventing the movement of hammer (8) and consequently the firing of the weapon.

Alternatively, the cylindrical body is provided with bearings and pins so that when the device is in the "locked" position, the visible end of said cylindrical body sticks out so as to project from the back of the handle as a way to alert the user of its condition, a ratchet system alternatively being provided in order to determine the exact rotation of the cylindrical body required to place the device in the "locked" or "unlocked" position.

